

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>G09G</b>		(11) International Publication Number: <b>WO 99/35633</b>
A2		(43) International Publication Date: 15 July 1999 (15.07.99)
(21) International Application Number: PCT/US99/00086		Charles, M. [US/US]; 667 N. Bradford Street, North Andover, MA 01845 (US).
(22) International Filing Date: 4 January 1999 (04.01.99)		
(30) Priority Data: 60/070,512 6 January 1998 (06.01.98) US 60/100,046 11 September 1998 (11.09.98) US		(74) Agents: VOCK, Curtis, A. et al.; Duft, Graziano & Forest, P.C., Suite 140, 1790-30th Street, Boulder, CO 80301-1018 (US).
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Applications US 60/070,512 (CIP) Filed on 6 January 1998 (06.01.98) US 60/100,046 (CIP) Filed on 11 September 1998 (11.09.98)		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BI, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
(71) Applicant (for all designated States except US): THE VIDEO MOUSE GROUP [US/US]; 18 Whitney Avenue, Westwood, MA 02090-2948 (US).		Published Without international search report and to be republished upon receipt of that report.
(72) Inventors; and (75) Inventors/Applicants (for US only): FREY, Robert, D. [US/US]; 19 Still River Road, Bolton, MA 01740 (US). GREALISH, Kevin [US/US]; 18 Whitney Avenue, West- wood, MA 02090 (US). VOCK, Curtis, A. [US/US]; 1279 Elder Avenue, Boulder, CO 80304 (US). MARSHALL,		

(54) Title: HUMAN MOTION FOLLOWING COMPUTER MOUSE AND GAME CONTROLLER

## (57) Abstract

A human motion following controller is provided by the invention to augment motion of items (e.g., computer cursor or scene view) shown on a computer display. The display is coupled to the computer which controls positioning of the items through operating system controls. A camera captures frames of data corresponding to a first image of at least part of a user (e.g., eyes, hands) at the computer display. Signal processing electronics coupled to the camera (a) detects differences between successive frames of data corresponding to motion of the first image, and (b) communicates differences information to the computer to reposition display of the items through the operating system controls. The items are thus repositioned on the display by an amount corresponding to the motion of first image.

